

AMENDMENTS TO THE CLAIMS

1-12. (Cancelled)

13. (Original) A thermal printing device, comprising:

a substrate having a surface formed with a plurality of grooves;

a plurality of microheaters suspended above the grooves, respectively; and

a covering structure arranged on the substrate and above the microheaters with a gap left between each of the microheaters and the covering structure.

14. (Original) The thermal printing device according to claim 13, wherein a material of the substrate is a monocrystalline silicon.

15. (Original) The thermal printing device according to claim 13, wherein the grooves are formed by way of silicon anisotropic etching.

16. (Original) The thermal printing device according to claim 13, wherein each of the microheaters has a sandwich layer structure comprising, from bottom to top, a dielectric layer, a resistor layer, and a dielectric layer.

17. (Original) The thermal printing device according to claim 16, wherein a material of the dielectric layer is selected from one of the group consisting of a silicon dioxide, a silicon nitride and a silicon carbide.

18. (Original) The thermal printing device according to claim 13, wherein the covering structure has a sandwich layer structure comprising, from bottom to top, a silicon dioxide, a silicon nitride and a silicon carbide.

19. (Original) The thermal printing device according to claim 13, wherein each of the microheaters is supported by at least one support and suspended above each of the grooves corresponding to each of the microheaters.

20. (Original) The thermal printing device according to claim 13, wherein the gap is formed by first defining a sacrificial layer followed by removing the sacrificial layer in a subsequent etching step.

21. (Original) A method for manufacturing a thermal printing device, comprising the steps of:

providing a substrate; forming a plurality of grooves on the substrate;

forming a microheater above each of the grooves; and

forming a covering structure on the substrate and above the microheaters with a gap left between each of the microheaters and the covering structure, the covering structure covering the microheaters.

22. (Original) The method according to claim 21, wherein a material of the substrate is a monocrystalline silicon.

23. (Original) The method according to claim 21, wherein the grooves are formed by way of silicon anisotropic etching.

24. (Original) The method according to claim 21, wherein each of the microheater has a sandwich layer structure comprising, from bottom to top, a dielectric layer, a resistor layer, and a dielectric layer.

25. (Original) The method according to claim 24, wherein a material of the dielectric layer is selected from one of the group consisting of a silicon dioxide, a silicon nitride and a silicon carbide.

26. (Original) The method according to claim 21, wherein the covering structure has a sandwich layer structure comprising, from bottom to top, a silicon dioxide, a silicon nitride and a silicon carbide.

27. (Original) The method according to claim 21, wherein each of the microheaters is supported by at least one support and suspended above each of the grooves corresponding to each of the microheaters.

28. (Original) The method according to claim 21, wherein the gap is formed by first defining a sacrificial layer followed by removing the sacrificial layer in a subsequent etching step.

29. (Original) The method according to claim 28, wherein a material of the sacrificial layer is selected from one of the group consisting of a polysilicon, an amorphous silicon and an aluminum metal.